

IN THE CLAIMS

1-7 (Canceled)

8. (new) A method for applying manganese phosphate layers to iron or steel surfaces comprising contacting workpieces with a phosphating solution comprising

0.2 to 4 g/l of iron (II) ions

10 to 25 g/l of manganese ions

25 to 50 g/l of phosphate ions (calc. as P_2O_5)

3 to 35 g/l of nitrate ions

0.5 to 5 g/l of nitroguanidine

said solution having 7 to 24 points of free acid, 50 to 140 points of total acid, and an S value of 0.2 to 1, and drying the workpieces to form a manganese phosphate layer having a minimum thickness of 2 μm and an average maximum roughness depth (R_z) of from 1.3 to 2.5 μm .

9. (new) The method according to claim 8, wherein said phosphating solution that comprises 0.5 to 2 g/l of nitroguanidine.
10. (new) A method according to claim 8, wherein the phosphating solution comprises not more than 2.5 g/l of iron (II) ions.
11. (new) A method according to claim 8, wherein the workpiece is steel and said phosphating solution comprises a complex-forming agent for the alloying constituents of the steel.
12. (new) A method according to claim 11, wherein said coupler-forming agent is citric acid.

13. (new) A method according to claim 8, wherein said phosphating solution further comprises at least one metal ion selected from the group consisting of
- 0.2 to 4 g/l of nickel ions and
- 0.2 to 4 g/l of magnesium ions.
14. (new) A method according to claim 8, wherein at least a portion of the manganese ions in said phosphating solution are replaced by manganese carbonate to neutralize free acid.
15. (new) A the method according to claim 8, wherein said workpieces are subjected to a sliding friction.
16. (new) A method according to claim 8, wherein said workpieces are selected from the group consisting of axles, gear mechanism parts and engine pistons.